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ABSTRACT

Effective schools are those that successfully impart basic computation and communication skills plus some knowledge of the sciences, social sciences, and humanities. School effectiveness should be measured by looking at the total learning environment and outcomes for all students. This environment consists of three identifiable aspects--ideology, social structure, and instructional practices--that cannot be assessed independently, but only as an interdependent system. Previous research suggests that, while much of the difference in achievement outcomes among urban schools can be explained by the student body's social status and/or racial composition, differing characteristics of the schools themselves greatly contribute to these differences. Ideologically, the more a school expects from students generally, the more effective it will tend to be for all students. In terms of social structure, evidence suggests that the greater the differences in social status, and consequently in expectations, within the student body, the less effective the schools will be for the full range of students. Effective instructional practices seem to be those in which correct and clearly defined patterns of behavior are consistently reinforced. Although literature on effective schools is extensive, more research is needed to give tested, valid information about methods of improving school learning environments. (JBM)

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RESEARCH FOR BETTER SCHOOLS, INC.
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EFFECTIVE SECONDARY SCHOOLS

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1981

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Research for Better Schools, Inc. (RBS) is a regional educational laboratory that uses the results of educational research and development to assist the elementary and secondary schools in Delaware, New Jersey, and Pennsylvania. This assistance takes the form of information, staff development programs, management training and consulting, evaluating, and special research projects.

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The Urban Development Component addresses urban educational issues by bringing together the resources of the laboratory and those of the professional associations, parent and community groups, state agencies, and urban school districts. The goal is to unite the knowledge about school effectiveness with the commitment of educational interest groups to forge a new coalition for the improvement of the public schools.

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TABLE OF CONTENTS

	Page
INTRODUCTION	1
RESEARCH ON EFFECTIVE SECONDARY SCHOOLS	5
A FRAME OF REFERENCE FOR EXAMINATION OF EFFECTIVE SCHOOLS	7
CHARACTERISTICS OF EFFECTIVE SCHOOLS	12
The Ideology of Effective Schools	14
Social Structure of Effective Schools	18
Instructional Practices in Effective Schools	24
NEEDED RESEARCH ON EFFECTIVE SECONDARY SCHOOLS	27
REFERENCES	32
BIBLIOGRAPHY	36

EFFECTIVE SECONDARY SCHOOLS

Introduction

The current educational concern with identifying effective schools follows a brief historical period in which many concluded that schools made no difference in the lives of students (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, & York, 1966; Jencks, Ackland, Bane, Cohen, Glatis, Heyns, Michelson, & Smith, 1972). Concomitant with this belief, the levels of achievement as measured by college aptitude and achievement test scores have declined. It is difficult to simultaneously conclude that schools make no difference in achievement and that student achievement is consistently declining. Surely the genetic pool or family background of American students has not declined so rapidly that either explains the 20 year decline in student achievement. We, therefore, operate on the assumption that there may be some explanation for the level of student achievement in the nature of the schools.

This assumption which gives direction to our examination of effective secondary schools implies some definition of school effectiveness. Both laypersons and professional educators have used a wide variety of criteria to assess the quality of both elementary and secondary schools. The nature of the buildings and other facilities, the success of athletic teams or the school band, the number of staff members and the range of their educational qualifications, and expenditures per student indicate the wide variety of school characteristics that have been used as indicators of school quality. The state and regional accreditation agencies have used many of these as the

basis for granting or denying accreditation to high schools. There is little evidence, however, to indicate that any of the above-mentioned characteristics of schools are significantly related to what the student learns if the family background of the student is controlled. We, therefore, do not include any such criteria as measures of school effectiveness. Unless a school characteristic is significantly related to the outcomes for students, it cannot be justified as a criterion of quality.

In this paper, we take the position that a certerion for effective secondary schools or any other schools is the effect that these schools have on students' learned behavior. The purpose of schooling is to teach children and young people to behave in some particular manner. This, of course, immediately raises the issue of what kinds of behavior are to be included in the intended outcomes of schooling. Numerous states and educational agencies have identified desired outcomes of education. We shall not attempt to identify these at this point, but a recently constructed set of educational goals drawn from many different sources is included in Brookover, Ferderbar, Gay, Middleton, Posner, and Roebuck, 1980. These goals are identified in terms of the kinds of behavior that educated human beings should exhibit. The first of these is the adequate and appropriate use of behaviors commonly identified as the basic skills. Acquiring and using communication and computational skills are certainly a part of the goals of education, and no doubt the most widely used criterion of school learning. But these basic communication and computational skills are not the sole outcomes of education. Their identification as "basic" suggests that they may be important avenues to the acquisition of other types

of behavior. The Committee of the Association for Supervision and Curriculum Development, which outlined the educational goals (Brookover et al., 1980), concluded that these skills facilitated the achievement of all the other goals of education and did not, contrary to much opinion, interfere with the achievement of any other desired goals of education. We, therefore, suggest that the primary criterion of effective schools must be the achievement and use of basic communication and computational skills. Certainly the use of a wide range of accumulated knowledge in the sciences and humanities is a significant goal of education, as well as the use of the basic skills. Such knowledge has occasionally been used as measures of effectiveness, but essentially no work has been done on the assessment of the several other desired behavioral outcomes of education. Our analysis of effective secondary schools will, therefore, largely be based on the basic computation and communication skills plus some knowledge of the sciences, social sciences, and humanities. This does not imply that the other educational goals are not desirable. It simply indicates that we have little evidence upon which to determine the degree to which schools are effective in producing students who are able to assess themselves effectively in a variety of social roles, understand other people, continue to learn effectively, have good mental and physical health, participate effectively in the economic world, be responsible members of the society, exhibit creative behavior, or cope with change effectively.

The second guide to our analysis is the criterion of effectiveness for <u>all</u> students. We do not consider the high school that has 5 percent National Merit Scholars among its graduates, but 60 percent of its

students as failing dropouts an effective secondary school. Many schools, both secondary and elementary, have been effective in teaching the children of middle-class educated parents the basic skills and other areas of human knowledge. Not so many have been equally effective in teaching the same behaviors to the children of the poor and less educated families (Fredrickson, 1980). We know of no schools that have been effective in teaching basic skills, or science and humanities to the children of poor families, but ineffective in teaching the children of middle-class families. We agree with Bloom (1976) that essentially all students are able to learn the basic skills and knowledge that are desired in American schools. The criterion for judging effectiveness, therefore, should be the effectiveness in teaching all students the desired behaviors rather than the selection of a few students to teach these desired behaviors and the identification of other students to be taught other human behavior and channeled into different social roles.

The above criteria for identifying effective schools should not imply that schools should not be pleasant places, that students and teachers should not be happy, or that schools should not be supplied with adequate and appropriate materials for instruction. Rather we are simply indicating that if happy teachers and students do not produce desired student learning or if pleasant school environments do not produce high levels of student learning, we should not identify them as effective schools. The bottom line is student behavioral outcomes. And these outcomes should be the basis for evaluating school effectiveness.

Research on Effective Secondary Schools

Comprehensive research on secondary school effectiveness as measured by student outcomes is very limited. Several studies involving some secondary school outcomes and a limited range of possible characteristics of secondary schools are available. These studies of secondary schools and some potentially relevant studies of elementary schools are described in Lezotte, Hathaway, Miller, Passalacqua, and Brookover (1980). Only a few studies (Glasheen, Hadley, & Schneider, 1977; Rutter, Maughan, Mortimore, Ouston, with Smith, 1979; Chen & Fresco, 1978) have examined the general effectiveness of secondary schools. Several of the studies have examined only a limited range of student outcomes such as math or physics (McDill, Meyers & Rigsby, 1967; Anderson, 1970; O'Reilly, 1975). These studies may identify characteristics of classrooms that are effective in teaching a limited range of knowledge to a relatively select group of students and not be effective in teaching other skills and knowledge to the full range of students. In each case these studies have been limited to a small number of classrooms or a small number of selected schools. Another caution in the examination of the secondary school studies is that several occurred in non-American societies. Although the nature of the schools and the relationship to their effectiveness may be generalized across cultures, it is quite possible that findings in other societies may not apply to United States schools. This question should be recognized in examining Chen and Fresko (1978); Anderson (1970); Cadaus, Kellaghan, King, and Rakow (1979); O'Reilly (1975); and Rutter and others (1979).

Several of the studies referred to were not designed to identify effective secondary school characteristics. For example, Hauser (1971);

Hauser, Alwin, and Sewell (1976); Coleman and others (1966); and Jencks and others (1972) are all concerned with whether or not the characteristics of schools identified make any contribution to the explanation of the variance in student outcomes. The general conclusion of all of these is that none of the school inputs measured, other than the socio-economic and racial composition of the student body, explained any of the variance in student outcomes. We must recognize, however, that only a limited range of the characteristics of the schools was identified in these studies and for the most part they were school input measures rather than the school learning environment.

Two studies are included in Lezotte and associates (1980)--Rosenbaum (1976) and Shafer and Olexa (1971)--because of their contribution to understanding of the school learning environment of secondary schools rather than their study of school effectiveness. These are studies of one and two schools with particular emphasis upon the tracking process and the effects of tracking on school outcomes.

Except for Rutter and others (1979) and Glasheen and others (1977), none of the secondary school studies referred to has investigated the characteristics of effective urban schools. Some have examined classrooms in metropolitan areas, but tell us nothing about inner-city school effectiveness for disadvantaged students.

Lezotte and associates (1980) have also described several elementary school studies which may be useful in the examination of secondary schools. Several of these studies have identified characteristics of effective schools, as measured by student achievement outcomes, and will be referred to when appropriate in subsequent discussion.

Although many still hold that schools do not make any difference in the outcomes for students, the studies of elementary and secondary schools which we have identified suggest that some characteristics of schools may explain differences in outcomes, as well as variances in the family background and the related socio-economic and racial composition of the schools. One of the first studies of secondary schools (McDill et al., 1967) demonstrated that the norms or climate of the secondary schools studied explained differences in math achievement, as well as variances in the socio-economic status of the families from which the students came. Similar findings have subsequently been obtained from elementary schools (Brookover, Brady, Flood, Schweitzer, & Wisenbacker, 1979) and in urban secondary schools (Rutter et al., 1979). These and other findings suggest the possible usefulness of examining the characteristics of effective as opposed to ineffective schools.

A Frame of Reference for Examination of Effective Schools

A major weakness of essentially all of the research on school effectiveness is the limited range of school characteristics examined in each study. The characteristics of advanced physics or mathematics classrooms are useful in identifying variables which affect the learning of math or physics in classes for selected students, but tell us nothing about the effectiveness of the school as a whole unless we understand the nature of the functioning school unit within which the math or physics classes are embedded. We do not by this mean that the classroom teaching environment is unimportant. Rather we emphasize that knowing the characteristics of classrooms that are

effective in teaching a highly selected class of physics or mathematics students tells us nothing about the effectiveness of the school in teaching other students or even whether these schools hold the students in school. Perhaps the best way to assure that there is a high level of achievement in mathematics classes is to make sure that no student who does not already know the intended math skills is permitted in a class. In order to understand the effectiveness of schools for all students, it is essential that we look at the total learning environment and the outcomes for all students.

In this perspective, we recognize that schools are functioning social systems and the outcomes of these social systems for students are dependent upon the manner in which the whole unit functions to teach or not teach the several behavioral outcomes. All aspects of the school social systems must be examined as potentially effecting the learning of the students in that social learning environment. Furthermore, the manner in which the many variables interact to facilitate or repress the learning of the desired student behaviors is essential.

One of the significant findings of the study of inner-city London secondary schools (Rutter et al., 1979) was that characteristics of schools that positively affected outcomes in one school, sometimes negatively affected outcomes in another school. Similarly in our study of Michigan elementary schools (Brookover et al., 1979) we found that parent involvement was negatively associated with mean school basic skill achievement in middle-class white schools, but positively associated in black schools. Any conclusion concerning the effect of any school characteristic on outcomes may, therefore, be in error unless it is examined in the context of its function in the school social system.

Some aspects of the school social systems may enhance the achievement outcomes for some students but at the expense of other students. Differential expectation states, for example, (Cohen 1980a , 1980b) may enhance the achievement for students in the high expectation state categories but lower the achievement of the students in the lower status categories. A school social system that is successful in classifying or sorting the students into different levels of learned behavior and/or differential positions in the society, may be ineffective in maximizing the outcomes for all students. Any appraisal of the effectiveness of the schools, therefore, must recognize the possibility that the school learning environment that maximizes the desired outcome for some students may minimize those outcomes for other students. Some evidence (Rosenbaum, 1976) indicates that students tracked into college bound curricula improve their I.Q. on the average while the average I.Q. of those not selected for this academic curriculum declines.

The total school social learning environment may be perceived as composed of three identifiable aspects: the ideology of the school, the social structure of the school and the instructional practices characterizing the school. These are not separate or independent aspects of the school social system. Rather they are closely interacting characteristics that cannot be independently assessed. We identify these three aspects only for the convenience of discussion.

The first of these aspects of the school social system--the ideology of the school--includes the beliefs about students' ability to learn; beliefs about the possibility of teaching them; the expectations which members of the school social systems hold for the students; and the norms of behavior

considered appropriate, important, and possible. Associated with these norms, beliefs, and expectations is the degree to which students feel it is possible for them to succeed in the system.

The second aspect of the school social system is the social structure of the school. This includes the size of the school, the stratification or status system of the student body in which students are identified by tracks, and curricula or other groupings. The nature of stratification systems associated with courses and curricula is particularly important in secondary schools. The students with varying statuses may also be identified by differential "expectation states" with regard to their academic or other behavior in the school. The stratification system may also involve differential adult statuses.

Associated with the stratification system are the specific status-role definitions for various members of the social system. How is the job of the teacher defined and for what behavior are the members of the system rewarded, either by formal recognition or informal strokes of approval or disapproval? The status-role definitions may define the students as learners or in terms of some other characteristic student behavior. Differential role expectations may be associated with different student statuses. What kinds of student behavior are rewarded and for what kinds of behavior are rewards withheld? The student role definitions, as well as the staff role definitions, are inexplicably related to the expectations, norms, and beliefs which we have identified under the ideology of the school.

We have identified the third aspect of the school social system as instructional practices. These factors include the degree to which the

specific objectives of the school's instructional programs are identified, defined, and accepted in the schools. These factors relate to the type of instructional practices characterizing the school. Is the instruction directed or focused on specifically identified objectives with an emphasis on mastery of those objectives? Or are students permitted to choose and determine what they want to learn with little direction from the teachers? The amount of time devoted to instruction and learning is a major dimension in any school's instructional practice. Another is the patterns of reinforcement or reward associated with learned behavior. Under what conditions are students reinforced in the instructional process and for what are they rewarded? Finally, the effectiveness of the instructional practices must be regularly assessed to determine the extent to which the identified objectives are achieved.

Although we have identified three sets of school social system characteristics and a number of variables under each of them, we reemphasize that these are not independent variables in the school social systems. Rather, they interact in various ways and possibly somewhat differently in each school. For example, the norms or expectations which characterize the school may be affected by the stratification of the student body and by the definition of the instructional objectives or the type of instruction. In like manner, the kind of behavior rewarded in the instruction-learning situation may be affected by the characteristic expectations and status system of the school. If highly differentiated expectation states are associated with different groups of students, some students may be reinforced for behaviors for which other students are

punished. Although we examine various aspects of the school in the following discussion, we believe that an adequate analysis of effectiveness must recognize the need to examine the school as a total functioning social system.

Characteristics of Effective Schools

The remainder of this paper will examine the characteristics of effective schools with particular reference to secondary schools and their possible emphasis in urban school situations. The general outline of characteristics of school social systems identified above will be followed. Contrary to previously held conclusions (Coleman et al., 1966; Jencks et al., 1972), there are great differences in the effectiveness of schools. In the study of London secondary schools, Rutter and associates (1979) found marked differences among schools on all of their outcome measures. These included school attendance, delinquencies, dropout rates, and success on the public school exams. Unlike the conclusions from Coleman and Jencks, these differences were not explained by differences in student input. There is also ample evidence of differences in basic academic achievement outcomes in American schools. The various state competency examinations and school assessment programs demonstrate significant variation in the measured school outcomes. Madaus, Airasian, and Kellaghan (1980) found that between-school differences are clearly shown when objective-referenced tests are used to measure the outcomes of the intended instruction rather than standardized norm-referenced tests. The latter are designed to differentiate among students rather than to measure the outcomes of education. There is more evidence of differences in achievement among

elementary schools than secondary schools. But there is some evidence that achievement is much greater in some secondary schools than others. The questions we are concerned with here are not whether some schools have higher achievement outcomes than others, but whether it is the schools rather than the background of the students that make a difference; and what makes the difference for schools.

Much of the difference in achievement outcomes among schools can be explained by the social status and/or racial compositon of the student body (Coleman et al., 1966; Brookover et al., 1979). But it is also now clear that essentially as great a percentage of the between-school differences in achievement outcomes, as well as other outcomes, may be explained by differences in the characteristics of the schools as social institutions (Rutter et al., 1979; Brookover et al., 1979).

The most important study of secondary schools in this area is the Rutter study (1979) of London secondary schools. Perhaps the most significant finding of the London study was that differences between schools in several outcome measures were consistent and that these differences were related to the characteristics of the school as a social institution. Several items such as the academic emphasis, the patterns of teacher-student interaction, and the system of rewards were all factors but they were cumulative in effect so that the total "ethos" of the school was the overriding characteristic that differentiated between the effective and ineffective schools. Throughout the subsequent examination of school effectiveness we must recognize that the effect of several variables may be cumulative or sometimes they may interact in such a way that one suppresses the effect of others.

The Ideology of Effective Schools

The ideology of the school as we view it is composed of a complex of beliefs, values, norms, and expectations which characterize the school. An essential characteristic of effective schools is the belief that students can learn. Teachers who evaluate their students as unable to learn are less likely to expect them to learn. Subsequently, these teachers are less likely to devote time and energy and are less likely to make a commitment to their teaching (Brookover et al., 1979). Students also must assess themselves as able to learn and believe that others similarly think they can learn. It is important to recognize, however, that a student's high assessment of his or her ability to learn is not sufficient to cause learning. Although a student's self-concept of ability is highly associated with individual student achievement (Brookover, Erikson, & Joiner 1967), many students who have high self-concepts of ability to learn do not learn at high levels. Evidence from our study of Michigan elementary schools (Brookover et al., 1979) demonstrates that students in predominately black schools have very high mean self-concept of academic ability compared to students in predominately white schools, but the mean achievement level of the black school students is decidedly lower than the achievement level of the students in white schools. In fact, there is a negative correlation of -.55 between mean self-concept of academic ability and mean student achievement in a random sample of Michigan elementary schools. One must, therefore, examine with great caution the notion that the enhancement of self-concept of academic ability alone will produce high achievement. At the same time that students in predominately black schools have high

self-concepts of academic ability, they also have very high feelings of futility in achievement of success in most of these schools. This measure of student sense of futility encompasses what is commonly identified as a sense of control. Thus, it is possible for minority students to have high self-concepts but a low sense of control of their school environment. This suggests that it is necessary for students to believe that they can learn and also to believe that it is possible for them to succeed in the school. If teachers do not think students are able to learn and/or do not provide adequate instruction, the acquisition of high self assessments by students is not likely to result in high levels of learning. In recent years, many schools have emphasized the improvement of students' self-concept, particularly among minority and other disadvantaged students, but frequently have assumed that this is sufficient to produce high achievement. There is no available evidence to determine the effect of such programs on other outcomes in secondary schools. Our elementary school data (Brookover et al., 1979) indicate that high self-concepts among minority students without the feeling that they can succeed in the school (low sense of futility) do not result in high achievement.

There is some evidence that many teachers do not believe they can teach some students. This is common in urban schools with populations of poor and/or minority students. Teachers feel they could teach other kinds of students but they cannot teach some students in their school. Other teachers may be able to do so. This is demonstrated by the extensive pattern of special education and special teachers for compensatory education in the school. In many schools, the role definition of appropriate

teacher behavior is to identify students whom they are unable to teach or whom others can teach better. The school then arranges for such students to be taken from the classrooms for at least a portion of the time. One of several recently reported effective schools case studies (Phi Delta Kappa, 1980) emphasized that students were not to be taken out of the classroom and the regular classroom teacher was responsible for the teaching of all students. There is little systematic evidence on this dimension of secondary schools, but the importance of teachers believing they can teach students and thus making a commitment to do so is clearly indicated in studies of elementary school effectiveness (Hoover, 1979; Phi Delta Kappa, 1980; Brookover et al., 1979).

Associated with the belief that students can learn and that teachers are able to teach students is the presence of high expectations for the achievement of all students. In both the review of secondary sources and the case studies reported in the Phi Delta Kappa (1980) report of successful urban schools, it was consistently found that high expectations for performance of students was a general characteristic. These and other studies of elementary schools (Brookover et al., 1979; Brookover & Lezotte, 1977; Brookover & Schneider, 1975) demonstrate that the level of expectations held for the students by members of the social system, particularly teachers, is associated with the level of achievement. Although several studies of secondary schools or secondary school classes have examined characteristics which may include the level of expectations (McDill et al., 1967; McDill & Rigsby, 1973; Chen et al., 1978; Madaus et al., 1979), only a couple of studies (Bassis, Brittingham, Ewing, Horwitz, Hunter, Long,

Maguire, Morton & Peculic, 1976; Glasheen et al., 1977) have specifically emphasized the level of expectations as factors in secondary school effectiveness. We should emphasize that high expectations for student achievement, although a necessary aspect of the effective school learning environment, is not sufficient unless the expectations are associated with effective instructional practices. We also suggest that differential levels of expectation for different students are not likely to enhance the general levels of achievement (Brookover et al., 1979). Cohen's (1980a, 1980b) research on expectation states of students indicates the effects of different levels of expectation held for different groups of students. As we will note in the section on social structure, the stratification system of the secondary school and classes within the secondary schools may be highly associated with the several categories of expectation states for different students. We hypothesize, therefore, that if the school is to be effective generally for all students, it must be characterized by high levels of expectations for all students.

Associated, of course, with the beliefs and expectations which we have identified are the norms of the school social system. Norms may be frequently identified as standards of achievement. Although there is limited evidence, general norms of high achievement and orderly behavior are very likely a necessary condition for effective schools. The Phi Delta Kappa case studies of elementary schools and review of literature (1980) suggested this as a characteristic of effective urban schools, although not specifically stated in these terms. Although it is a study of a limited number of white secondary schools, the McDill and associates studies (1967, 1973) clearly

identified norms of achievement and named academic emulation as a primary factor in effective mathematics achievement. Although they did not use the term "norms," Rutter and associates (1979) emphasize the "ethos" of the school as a social institution as the major factor in school outcomes. The norms of academic and other behavior are certainly a significant part of the ethos.

If the school is not characterized by the belief that students can learn and the expectation that they will learn, it is very likely to have a large number of students who feel that they have no chance for success. We found that the level of students' sense of futility in elementary schools was largely explained by the level of teachers' evaluation and expectations held for the students (Brookover et al., 1979). We do not know of comparable data at the secondary school level, but the significance of a similar sense of control variable is demonstrated in the Equality of Educational Opportunity study (Coleman et al., 1966).

Although we have discussed the ideology of the school under a variety of of headings--beliefs, expectations, norms, and sense of futility--we hypothesize that these are part of a complex of interacting factors that can hardly be separated in the actual school situation.

Social Structure of Effective Schools

Little is known about the possible relationship of some of the more obvious characteristics of school social structure to levels of effectiveness. The 5th-8th, 6th-9th, or other grade level organization in middle schools, and 9th-12th or 10th-12th grade high schools, as well as the

departmental organizations of the schools, are frequently changed or proposed because of presumed differences in producing effective learning. We know of no systematic study that demonstrates that different organizations of these sorts are more or less effective in producing student outcomes. Advocates of middle schools currently argue that organizations of this type are decidedly better than junior high school organizations. The limited evidence available does not support such conclusions. As a personal aside, I suggest exactly the same arguments that are now made for middle school organization were vehemently presented as arguments for the junior high school organization a half century ago. Patterns of preference for 3- or 4-year high schools have varied over time, but there is little, if any, evidence to demonstrate that one type of organization is more effective than another.

Currently there is considerable interest in the effect of the size of the school on various outcomes. A study is currently underway to examine the effect of size on a number of school outcomes (Westinghouse, 1980). This study, however, is not designed to examine the relation of size to student achievement. Our data on a random sample of elementary schools in Michigan indicate that size is negatively associated with mean student achievement of basic skills. When the socio-economic and racial composition of the student bodies are controlled, the contribution of size of school to an explanation of the differences in achievement disappears. Although size of the school may be a significant variable in achievement, there is no adequate evidence at this time to make such a conclusion.

Belief that the principal is a key factor in determining whether or not the school is effective is widely held. Studies of elementary schools seem to suggest that the manner in which the principal plays out his/her role may be a major contributor to school effectiveness (Phi Delta Kappa, 1980). The exact nature of the principal's role, however, is not clearly defined. A small study of improving and declining schools indicated that the principals in the two groups of schools performed quite differently (Brookover & Lezotte, 1977). The declining schools' principals were well thought of by the staff, had good relationships with them, and were generally more public relations oriented. In improving schools, the principals could be more accurately characterized as directors of instruction. These findings are supported somewhat by a study which used the Halpin-Croft human relations type of organizational climate instrument (Conran & Beauchamp, 1976). They found a negative relationship between pleasant principal-staff relationships in junior high and elementary schools and school achievement. The Phi Delta Kappa (1980) studies support the general conclusion that the principal is a major factor in effective urban schools. The particular type of principal behavior, however, is somewhat varied. Our hypothesis would be that the principal's role should be defined as a director of instruction and an evaluator of the school's effectiveness. The school system should reward principals for producing effective student learning and ought not to reward them for failure to do so. Although there is much discussion of its importance in the literature, the precise definition of the principal's role in effective schools has not been demonstrated. This is particularly true of secondary schools. Because of the difference in size and organization of the secondary schools compared to elementary, it

Elmstown Study (Hollingshead, 1949), McDill et al., (1967, 1973), and Coleman's Adolescent Society (1961). All of these have in one way or another indicated that different student role definitions are associated with the kinds of behavior valued and acquired in the school. It seems clear that schools in which appropriate behavior for the majority of the students is defined as high academic achievement will be more effective in producing such behavior than schools in which higher achievement is considered inappropriate for many or all of the students. The kinds of student behavior that are approved, recognized, and rewarded will almost certainly identify the behaviors that are valued and are more likely to result from school experience.

As implied in a discussion of student roles' definition, it is apparent that there is a wide range of different roles in the schools. The differentiation in role expectations for students is probably greater and more clearly defined in secondary schools than in elementary ones. The differences in curricula tracks and various informal subsystems are likely to make it possible to identify distinctly different strata in the student population. Perhaps the most comprehensive examination of the research on stratification of schools and the possible effects on student outcomes is found in Carolina Persell's Education and Inequality (1977). Case studies of single high schools are found in Rosenbaum (1976) and Shafer and Olexa (1971). Work by Alexander and McDill (1976) confirms the findings of the case studies that curricula stratification systems in the school are associated with the differences in student outcomes. Our research on elementary schools (Brookover et al., 1979) demonstrated that the degree of differentiation

may be that other secondary staff roles may be as important or more important than the principal's in producing effective schools.

The folk knowledge in regard to teachers is similar to that of the principal. Many laypersons as well as educators assume that the teacher is the key to effective schools and that dedicated professional teachers are the answer. Research that defines the effective teacher role, however, is far from adequate. The Phi Delta Kappa review and case studies place considerable emphasis upon teacher accountability for teaching students. Our elementary school research identifies teacher commitment as important (Brookover et al., 1979). We hypothesize that the teacher's role should be defined as the instructor of all students and that the teacher should be rewarded for effective learning by all students. Certainly, it is not uncommon for teachers to be rewarded for many other types of pleasant behavior which may be irrelevant to student learning.

The manner in which the student role is defined in the school is certainly a major aspect in the social system. At the secondary level, particularly, there may be several subsystems in which the appropriate student behavior varies significantly. The "brain" or the "jock" roles in a given school may define decidedly different behavior as appropriate. The resulting outcomes in student behavior will likewise vary. A school might be very effective in producing winning athletic teams while it is ineffective in producing high levels of cognitive achievement. Several studies have produced significant findings relevant to the student role definitions and some are correlates of achievement. Among these are the

in the objectives and instructional programs for the students was negatively associated with mean basic skill achievement. Research based on expectations states theory provides a theoretical foundation for understanding the effect of student stratification and differentiation and possible ways to overcome the effects of different expectations (Cohen, 1980a, 1980b); Mercer, Iadacola & Moore in Stephan, 1980). One of the most striking findings of research in this area is that curricular enrollment is associated with differential changes in intelligence test scores over a 2-year period (Rosenbaum, 1976).

There are many studies of tracking and/or ability grouping in secondary schools. A wide variety of course materials, grade levels, and methods of analysis is found in these studies, which vary widely in quality. One of the most comprehensive reviews of this research is that by Findley and Bryan (1970). Although ability groups and tracking may have enhanced the achievement of a limited range of students in some school situations, the overall conclusion is that it does not generally enhance the outcome for students. Few studies, however, have focused on the total school stratification system and the effects of curricula and status differentials on the achievement of students generally. Since the purpose of tracking is to provide different education to different groups of students in the secondary schools, different curricula are provided for each track. There is little doubt that differential programs in secondary schools produce somewhat different effects. As pointed out by Madaus and others (1979), the nature of criteria used for measuring effects may drastically affect the results of such research. Studies such as the Equality of Educational Opportunity study which used a general achievement

test in a very limited range of subject matter is not as sensitive to differences in outcomes determined by criterion measures based upon the specific objectives of the educational programs.

In general, it seems safe to conclude that the structure of the secondary schools as identified by the principal, student, and teacher role definitions and the formal and informal stratification system within the school will have significant impact on the outcomes of student experience in the school. Considerable information is known about the effects, but much is yet to be learned. We would hypothesize that the greater the differences in status within the student body and the associated differences in expectation states, the less effective the schools will be for the full range of students.

Instructional Practices in Effective Schools

We do not wish to review all aspects of instructional practices in effective schools, but we do wish to emphasize that an analysis of the school ideology and social structure would be incomplete without some understanding of the instructional practices. As we have indicated earlier, high expectations and beliefs that students can learn are not sufficient to produce high levels of learning. An instructional program in accord with the belief that students can learn and the expectation that they will learn is also essential. We want, therefore, to identify a few instructional practices that are associated with high levels of effectiveness. The studies from which these are drawn have been predominately in elementary schools. Their application to secondary schools may be questioned, but they may be relevant in the secondary school learning environment.

Various studies have identified the nature of the learning objectives as an area associated with effective school outcomes. The Phi Delta Kappa survey and case studies (1980) repeatedly indicated that the identification of objectives and the definition of the school's purpose were associated with effectiveness in achieving those objectives. Our study of improving and declining schools (Brookover & Lezotte, 1977) found that improving schools had clearly understood and stated basic skill objectives while declining schools either did not identify the objectives or rejected them as inappropriate for their students. Our experience in secondary schools suggests that they are much less likely to have defined the objectives of particular courses or for the school in general than elementary schools. This complicates the task of determining the degree in which secondary schools are effective in achieving appropriate outcomes. Nearly all of the studies of secondary school effectiveness have identified a very narrow range of achievement objectives. Many, of course, have focused upon a single class or a small number of classrooms.

A second type of instructional practice likely to produce more effective schools is some type of structured or directed instruction. This contrasts with a more open classroom pattern in which students help to decide what they wish to do. Directed instruction involves the identification of goals or objectives for the instruction and a planned program of instruction to achieve those ends. Mastery learning techniques which involve these and other characteristics have demonstrated their effectiveness (Bloom, 1976; Block & Anderson, 1975; Block, 1979).

The third instructional practice associated with student learning outcomes is the amount of time on task or engaged time. The relationship between the amount of teaching-learning time and achievement is significantly high. I would like to emphasize that the amount of time may vary greatly for different groups of students and students whose role expectations are decidedly different. Teachers who have a low evaluation of students' ability to learn and low expectations for them are also less likely to devote as much time to their instruction than they would to students for whom they hold high evaluation and expectations. This emphasizes again the interrelationship among the various aspects of the school's social system.

There is an increasing body of research which indicates that team cooperation and team competition are more effective than individual competition (Slavin, 1977; Slavin & DeVries in Walberg, 1979). Team game competition on learning tasks provides an appropriate practice for motivating students and defines academic learning as appropriate for the students. We have hypothesized that this is most effective if all students are involved in the teams competing on the learning task. If students are stratified into superior and slow teams, the school creates another basis for differential expectation states (Cohen, 1980a, 1980b).

Observation of elementary classrooms (Brookover et al., 1979) and some evidence at the secondary level (Fernandez, Espinosa, & Dornbusch, 1975) indicate students who are achieving at a low level or are frequently providing wrong answers are often praised or otherwise reinforced for their low levels of achievement. To the extent that this occurs, students will be more likely to respond with the incorrect responses in the future. There is some evidence that teacher praise is so indiscriminately given that it ceases to

have any reinforcement value (Brophy, 1979). In the light of this research, we hypothesize that effective schools are those in which correct and clearly defined patterns of reinforcement for desired behavior are consistently practiced. Certainly reinforcement is associated with learning.

The last instructional practice we wish to mention is the regular monitoring or assessment of effectiveness. If it seeks to be effective, the principals and the central administration, as well as the teachers should continually monitor and assess the degree to which the school is effective. We hypothesize that evaluation of the school as a unit or at least secondary school departments rather than individual teachers will enhance the unit's effectiveness.

There are probably other instructional practices that generally characterize effective schools. We have mentioned some that are less likely to be identified in other sources. Any instructional practice must be examined in the context of the school social system.

Needed Research on Effective Secondary Schools

We have identified from time to time a number of weaknesses or inadequacies in the research on secondary school effectiveness. There is considerably more comprehensive research on the elementary schools of the United States, but these studies almost exclusively measure effectiveness by a limited range of basic skill achievement. We do not wish to criticize that as a starting point, for we believe that basic skill learning is essential for the achievement of other student outcomes. A few studies have identified other outcomes (Brookover et al., 1979; Rutter et al., 1979).

At the secondary level the outcomes have been even more limited. In most of the studies, outcomes for only a single course such as mathematics or physics are identified. One of the great needs for research on secondary schools, therefore, is to examine a wider range of student outcomes and identify characteristics of the school social system associated with those outcomes. Although some are difficult to measure and some cannot be measured until post-high school years, we need to examine as many of the behavioral outcomes as possible. The goals for education and the model of research identified in the Association for Supervision and Curriculum Development publication would be good starting points (Brookover et al., 1980).

A second observation that should be made concerning the limitations of current research on effective secondary schools is that except for the Rutter study of London inner-city schools, little attention has been given to urban school situations. Several of the studies are limited to the achievement of a select group of students in advanced physics or math classes and give us no information concerning the achievement of a wider range of students in typical urban schools.

Most of the studies have used some norm-referenced achievement measure. As Madaus and others (1979) point out, such measures are of limited usefulness in identifying school differences in outcomes. Such tests are designed to differentiate among individual students, but are not designed to measure the effectiveness of particular instructional programs or schools. It is essential, therefore, that schools identify desired objectives and that objective-referenced tests are designed to measure these outcomes.

At several points in this paper we have emphasized the fact that schools are social systems. Specific characteristics of schools may be associated in one way or another with the student behavioral outcomes. The fact that a specific characteristic such as individualized instruction, for example, may be positively associated with some range of achievement outcomes in one school or one type of school does not guarantee that it would be associated in a similar fashion in other types of schools (Brookover et al., 1979). For this reason it is necessary to examine the way in which the school functions as a total unit. Individualized and differentiated instructional programs may function to limit the goals and achievement for many students in some schools, but serve to assure the mastery of those objectives by all students in other schools. The investigation of any characteristic of the school learning environment needs, therefore, to be placed in the context of the functioning social system of the school.

The examination of a total school social system as a learning environment is currently handicapped by the lack of an adequate methodology. The development of school climate studies (McDill et al, 1973; Rutter et al., 1979; Brookover et al., 1979; and Walberg, 1979) has made significant contributions to the methodology of examining total school learning environments. Valid and reliable measures of this total environment, however, have not been developed. The author and associates are currently working on a comprehensive school learning climate assessment instrument. The ethnography and the ecology of the school (Goodlad, 1979) are promising approaches. These, however, have not developed sufficiently to provide a systematic picture of a total social learning system.

The secondary school social system is further complicated by the fact that there may be several subsystems within the school. The different tracks or curricula may represent quite different subsystems which must be related to the total system. There also may be several informal strata within the school based upon race, socio-economic status, or a variety of other social phenomena. To the extent that these subsystems involve differential goals and objectives or differential norms and expectations, they may function quite differently from other such systems. Examination of one may tell the researcher very little about the functioning of another.

The examination of secondary schools must include several levels: individuals, classrooms, informal groups, curricula tracks, and social strata, as well as the total social system (Barr 1980). Considerable literature suggests the classroom is the appropriate unit of analysis for learning environments. Without diminishing the importance of the classroom as the learning environment, we would emphasize that classrooms function within a total school unit with norms and expectations and various structural characteristics. The students in the classroom may be made up of quite different subgroups in the school as one moves from classroom to classroom. It is, we believe, essential to identify and understand the total social context within which classrooms function in order to adequately understand the learning environment. Several levels of social units, therefore, need to be examined for a comprehensive picture of the school learning environment (Barr, 1980).

The final gap in our understanding of effective secondary schools, as well as elementary schools, is the lack of knowledge on how to change school learning social systems.

Literature on the introduction of new instructional materials and new methods of teaching particular areas of knowledge are extensive, but we have very little systematic knowledge of ways in which a total learning environment with its norms, beliefs, expectations, stratification, and instructional practices can be changed. Lezotte and others (1980) made a mild beginning in this area. This work is based on a Michigan State University team's experience in elementary schools. There is, however, very little tested, valid information about the methods of changing either the elementary or secondary school social learning environments.

Although we have identified a number of studies and have specified several hypotheses concerning the characteristics of effective secondary schools, the primary conclusion to be drawn from this paper is that we have much more to learn about such schools than we now know.

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